Washington State University

MAJOR CURRICULAR CHANGE FORM -- NEW/RESTORE COURSE

☐ Please attach rationale for your request, a complete syllabus, and explain how this impacts other units in Pullman and other campuses (if applicable).
☐ Obtain all required signatures with dates.
☐ Provide original stapled packet of signed form/rationale statement/syllabus PLUS 10 stapled copies of complete packet to the Registrar’s Office, campus mail code 1035.
☐ Submit one electronic copy of complete packet to wsu.curriculum@wsu.edu.

Requested Future Effective Date: Fall 2016 (term/year) Course Typically Offered: Fall, alternate years

DEADLINES: For fall term effective date: October 1st; for spring or summer term effective date: February 1st. See instructions.

NOTE: Items received after deadlines may be put to the back of the line or forwarded to the following year. Please submit on time.

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<tr>
<th>New Course</th>
<th>Temporary Course</th>
<th>Restore Course</th>
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<tr>
<td>PharmSci</td>
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Fundamentals of Chronopharmacology

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<tr>
<th>course subject/crosslist</th>
<th>course no.</th>
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Graduate standing or permission of the instructor required

prerequisite

Description for catalog: Role of the circadian clock in pharmacology as it relates to therapeutic efficacy, with a special emphasis on anti-cancer drug treatment

Additional Attributes: Check all that apply.

☐ Crosslisting (between WSU departments)*
☐ Conjoint listing (400/500):
☐ Variable credit:
☐ Repeat credit (cum. max. hrs):

Special Grading: ☐ S, F; ☐ A, S, F (PEACT only); ☐ S, M, F (VET MED only); ☐ H, S, F (PHARMACY, PHARDSCI only)

☐ Cooperative with UI
☐ Other (please list request):

The following items require prior submission to other committees/depts. (SEE INSTRUCTIONS.)

☐ Request to meet Writing in the Major [M] requirement (Must have All-University Writing Committee Approval.)

☐ Request to meet UCORE in                                               (Must have UCORE Committee Approval) See instructions.

☐ Special Course Fee                                                 (Must submit request to University Receivables.)

Contact: Kay Meier
Phone number: (509) 358-7631
Email: kmeier@wsu.edu
Instructor, if different: Shobhan Gaddameedhi

See next page

Chair/date
Dean/date
All-University Writing Com / date

Chair (if crosslisted/interdisciplinary)*
10/15/2015

Dean (if crosslisted/interdisciplinary)*

UCORE Committee Approval Date

Catalog Subcommittee Approval Date
GSC or AAC Approval Date
Faculty Senate Approval Date

*If the proposed change impacts or involves collaboration with other units, use the additional signature lines provided for each impacted unit and college.
Washington State University
MAJOR CURRICULAR CHANGE FORM -- COURSE
(Submit original signed form and ten copies to the Registrar’s Office, zip 1035.)

Future Effective Date: 01/01/2016
(effective date cannot be retroactive)

☐ New course  ☐ Temporary course  ☐ Drop service course
☐ There is a course fee associated with this course (see instructions)

☐ Variable credit ________
☐ Increase credit (former credit ________)
☐ Number (former number ________)
☐ Crosslisting (between WSU departments)
   (Must have both departmental signatures)
☐ Conjoint listing (400/500)
☐ Request to meet Writing in the Major [M] requirement (Must have All-University Writing Committee Approval)
☐ Request to meet GER in ________
   (Must have GenEd Committee Approval)  ☐ Fulfills GER lab (L) requirement
☐ Professional course (Pharmacy & Vet Med only)  ☐ Graduate credit (professional programs only)
☐ Other (please list request) ________

PharmSci course prefix  540 course no. Fundamentals of Chronopharmacology title

3 3 0 0 graduate standing or permission of the instructor prerequisite

credit lecture hrs lab hrs studio hrs per week per week per week

Description (20 words or less) Role of the circadian clock in pharmacology as it relates to therapeutic efficacy, with a special emphasis on anti-cancer drug treatment.

Instructor: Shobhan Gaddameedhi  Phone number: (509) 368-6570  Email: shobhan.gaddameedhi@wsu.edu
Contact: Kay Meiler  Phone number: (509) 358-7631  Email: kmeier@wsu.edu
Campus Zip Code: 1020

- Please attach rationale for your request, a current and complete syllabus, and explain how this impacts other units in Pullman and other branches (if applicable).
- Secure all required signatures and provide 10 copies to the Registrar’s Office.

Chair/Date  Dean/Date  General Education Com/Date
Chair (if crosslisted/interdisciplinary)*  Dean (if crosslisted/interdisciplinary)*  Graduate Studies Com/Date

All-University Writing Com/Date  Academic Affairs Com/Date  Senate/Date

*If the proposed change impacts or involves collaboration with other units, use the additional signature lines provided for each impacted unit and college.
Course Title: Fundamentals of Chronopharmacology

College of Pharmacy
Washington State University Spokane
Spring 2016

Course Logistics
Course Number: PharmSci 540

Prerequisite(s): Graduate standing or permission of the instructor.

Course Description:
Role of the circadian clock in pharmacology as it relates to therapeutic efficacy with a special emphasis on anti-cancer drug treatment.

Academic Hours (Lecture-Lab-Total): 3-0-3

Instructor of Record:
Shobhan Gaddameedhi, MSc, PhD
Experimental and Systems Pharmacology
Phone: 509-368-6570
Email: Shobhan.gaddameedhi@wsu.edu
Office: PBS 323
Office hours: by appointment

Course Communication:
WSU Spokane and Pullman use the Blackboard. If you have not used Blackboard before, please take a few minutes to become familiar with the system prior to the start of the semester. There is a short student orientation video on Blackboard at https://news.wsu.edu/announcement/blackboard-learn-now-available-to-instructors/

Semester: Spring-2016

Course Time and Location: Two sessions per week, 1 hour 15 minutes each.

Office Hours: TBA

Course Objectives
As an overview, this course is designed with the following major goals in mind:

1) To provide students in Pharmacy graduate and professional programs with a foundation in circadian rhythm, its impact on biomedical research and human health and temporal effects of drug action relevant to the pharmacology.
2) To provide all students, including interested students from other degree programs, with a foundation in principles of molecular clock, circadian rhythm, sleep, chronobiology, and pharmacology in relation to human health and drug therapy.
3) To build critical thinking skills in the pharmaceutical sciences.

After completion of this course, students will be able to [method of assessment is provided in brackets]:

1) Explain basic concepts of the circadian clock, circadian rhythm, sleep, jet lag, and shift work. [exams]
2) Describe molecular and biochemical mechanisms involved in regulation of the circadian rhythm. [exams]
3) Explain the daily challenges in cellular responses to various type of genotoxic agents and how the circadian rhythm cope with these daily challenges (chronotolerance). [exams]
4) Explain basic methods used to understand circadian clock output data including cancer, aging, and cardiovascular diseases. [exams]
5) Explain the impact of circadian clock in pharmacological science/chronopharmacology. [exams]
6) Describe the biomedical importance of the chronopharmacology discipline in drug treatment, such as the chronotolerance of anti-cancer drugs. [exams]
7) Read, analyze, and discuss original research articles related to the experimental chronopharmacology of anti-cancer drugs [in-class discussions and written assignment]

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<th>Topic Outline</th>
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**Expectations of students**

Students are expected to attend lectures, and are responsible for all material presented in the lectures plus any additional material as directed by the instructor. “Make-up exams” will be scheduled only under the most extraordinary circumstances, after receiving approval of the instructor prior to the exam.

**Grading Scale:**

A = 93-100%  
A- = 90-92%  
B+ = 87-89%  
B = 83-86%  
B- = 80-82%  
C+ = 77-79%  
C = 73-76%  
C- = 70-72%  
D+ = 67-69%  
D = 60-66%  
F = < 60%

In calculating the final grade, percentages will be rounded to the nearest whole number.
Examinations

There will be two examinations, each comprising 30% of the final grade. The exams will consist of multiple choice and short-answer questions. There will be a written assignment (30% of the final grade) to evaluate that the students can think and synthesize the research ideas in the area of circadian rhythms as it relates to pharmacological sciences. Therefore 10% of the final grade for in-class discussions will be based on attendance and participation as described below.

In-class discussions

There will be in-class discussions of research/review articles, assigned by the instructor, on a weekly basis or at the discretion of the instructor. Each student will be expected to participate in discussion of the paper.

Rubric for grading the in-class discussions:

- 5 points: Attendance; providing a valid excuse if unable to attend
- 5 points: Preparation; familiarity with the paper as reflected in general discussion, even if issues remain to be clarified regarding methodology and details, critical thinking as reflected in presentation of figures, and in discussion

Written assignment

The idea of the written assignment is to broaden course participation beyond the traditional exam format. With this approach students will be able enhance scientific thinking, scientific writing skills, interpretation of the scientific literature within the field and able to write and discuss the papers. The topic for the written assignment will be chosen within the chronopharmacology field. Specifically, Instructor will encourage the students to select a clock controlled gene or a molecular pathway which plays a key role in pharmacology of currently available drug(s) in the market and discuss on how circadian clock plays an importance role in increasing the efficacy of the drug by minimizing the toxicity while increasing the treatment outcome of those individuals.

Required and Optional Textbooks, References, and Other Resources

- The instructor will provide extensive handouts and/or copies of PowerPoint Presentations that substitute for a textbook. Book chapters/journal articles/relevant reviews (for in-class discussion) will be posted on Blackboard. Therefore, textbook(s) are not required for comprehensive understanding of the subject.

Additional reading materials from scientific review articles will be assigned as needed to support the learning objectives for individual lectures and written assignment.

Additional Comments

Class Format and Schedule: This is a lecture-based course that includes in-class discussion. The instructor will use various methods to encourage student participation in the classroom.

Methodology: Lectures, in-class discussions, written assignment and examinations.

Academic Honesty, Conduct, and Behavior

Student Conduct Code and Standards of Professionalism

The WSU Standards of Conduct for Students (Student Conduct Code) is in the WSU Spokane 2010-2011 Student Handbook, and also at www.conduct.wsu.edu/default.asp?PageID=338 (Chapter 504-26 WAC). Any violation of the Student Conduct Code is a disciplinary issue and is within the jurisdiction of the Office of Student Conduct. As such, the Conduct officers or Conduct Board make decisions on sanctions for violations of the code.

Grievance Procedures

Appeal procedures for students who have been sanctioned under the WSU Student Conduct Code are set forth in the Student Conduct Code, WAC 504-26-407 found at http://apps.leg.wa.gov/WAC/default.aspx?cite=504-26-407.
It is the responsibility of students and faculty to promote academic integrity and intellectual honesty. All assignments should demonstrate independent effort and thought unless otherwise instructed. Evidence of cheating, copying of homework, working as a group on an independent assignment, plagiarism, or not citing references properly will result in a conference with the instructor. The possible consequences of breaching academic integrity include the following: failing grade on the quiz or assignment, a full letter grade drop for the course, or a failing grade in the course. The student will also be referred immediately to the office of the Dean and/or the WSU Office of Student Conduct.

Course Evaluations

Student evaluations of courses/course modules and faculty effectiveness are a valuable and important component of the College’s commitment to provide quality learning experiences and contribute to our efforts to assure that students achieve the objectives of our professional degree program. Thus, all evaluations are given serious consideration as part of the assessment process and are read first by the Department Chair before they are processed, analyzed, and given to the faculty. Because the most effective way to impact positive changes is through constructive comments, we encourage you to provide feedback as you would wish to receive it. This will allow the faculty member to focus on improvements or affirm students’ perspective on effective elements of the course.

Students with Disabilities Statement

All students requesting reasonable accommodation must meet with the instructor prior to or during the first week of the course to review all proposed accommodations in relation to course content and requirements. Please note that written evaluations can be accommodated but performance evaluations are considered analogous to job skill performance, therefore expectations will not be adjusted.

Reasonable accommodations are available for students with a documented disability. If you have a disability and may need accommodations to fully participate in this class, please contact Liz West, Assistant Director of Student Affairs, Academic Center 130 (liz.west@wsu.edu, 509-358-7534). Read more: http://spokane.wsu.edu/students/current/StudentAffairs/disability/disabilityguidelines.html

Campus Safety

The WSU Campus Safety Plan, which can be found at http://safetyplan.wsu.edu, contains a comprehensive listing of university policies, procedures, statistics, and information relating to campus safety, emergency management, and the health and welfare of the campus community. Please visit this web site as well as the University emergency management web site at http://oem.wsu.edu/Emergencies to become familiar with the campus safety and emergency information provided. Everyone should also become familiar with the WSU ALERT site (http://alert.wsu.edu) where information about emergencies and other issues affecting WSU will be found. This site also provides information on the communication resources WSU will use to provide warning and notification during emergencies. It should be bookmarked on computers. Finally, all faculty, staff, and students should go to the zzusis portal at http://zzusis.wsu.edu and register their emergency contact information for the Crisis Communication System (CCS). Enter your network ID and password and you will be taken to the zzusis portal page. Look for the Pullman Emergency Information box on the left side of the page and click on Update Now to be taken to the registration page where you can enter your cell, landline, and email contact information as well as arrange for emergency text messages to be sent to your cell phone.